

# Modern University Academy System: A Useful Exploration of Promoting the Cultivation of Innovative Abilities of College Students

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**Abstract:** *The report of the 20th Party Congress puts forward new requirements for the quality of talent cultivation, pointing out that colleges and universities should play the role of the main position in cultivating talents, comprehensively improve the quality of independent cultivation of talents, make efforts to create top-notch innovative talents, and gather all the world's talents and use them. However, under the traditional nurturing mode, the innovation ability training of college students in China still exists problems such as weak innovation consciousness, weak innovation knowledge, rigid innovation thinking, and lack of innovation skills, etc. In recent years, some colleges and universities have carried out the reform of academy system to innovate the talent cultivation mode, organizing students of different faculties and departments with different majors, establishing learning and living communities with teacher-student and student-student interactions, implementing general education and tutor system, and emphasizing student-oriented and all-around development, which has a positive impact on stimulating students' innovative consciousness, enriching students' innovative knowledge, enlightening students' innovative thinking, and improving students' innovative skills, and it is a useful exploration for enhancing the innovation ability of college students in higher education.*

**Keywords:** *Academy System; Modern University Academy; College Students; Creative Ability; Creative Ability Cultivation; Talent Cultivation Model*

## 1. Introduction

The report of the 20th Party Congress puts forward that "it is necessary to insist that science and technology is the first productive force, talent is the first resource, and innovation is the first driving force, and to implement in-depth the strategy of revitalizing the country through science and education, the strategy of strengthening the country through talent, and the strategy of innovation-driven development, so as to open up new fields and new tracks of development, and to continuously shape new dynamics and new advantages in development. "If a country wants to stand in the forest of the world's nations and have absolute comprehensive strength and global competitiveness, it must realize scientific and technological innovation, and the main body of scientific and technological innovation is the talents with high comprehensive quality and strong innovative ability. New era college students are socialist builders and successors who shoulder the mission of the times and take the responsibility of the times, and the level of their innovation ability directly affects the pace of China's modernization and the future development and direction. In this paper, we analyze the problems in the cultivation of college students' innovation ability in the traditional nurturing mode, and study the influence mechanism and enhancement path of the new talent cultivation mode of academy system on the cultivation of college students' innovation ability, with a view to forming a useful supplement to the research on the cultivation of innovation ability.

## 2. Connotation of Modern University Academy System and Innovative Ability of College Students

### 2.1. Connotation of the Modern University Academy System

Modern university academy System is a useful attempt for universities to promote the change of university governance mechanism and student management system, as well as an important initiative

for universities to innovate talent cultivation mode. Fudan University took the lead in exploring the academy system reform in 2005, and then the reform of the academy system started to spread like a prairie fire in all colleges and universities in the Mainland. After more than a decade of exploration and accumulation, the number of academy system in China continues to increase, the scale is expanding, the mode is becoming more and more diversified, showing a strong inner vitality. However, the academy system in China is still in the exploratory stage, and scholars have different definitions of academy system based on their own research perspectives, and a unified consensus has not yet been formed. Li Cuifang and Zhu Yingling (2009) believe that the academy system is a student community life management model that takes the student dormitory as the management space and platform, and the student apartment as the living community, implements general education for students, and undertakes the educational tasks of students' ideology, morality, and behavioral development, etc. The College is a community life management model for students.<sup>[1]</sup>Ye Zhengrong (2013) believes that the university academy takes the student dormitory area as the carrier of students' cultural education, aiming to build an all-round, whole-process cultural nurturing environment, create a cultural education atmosphere that improves the comprehensive quality of college students, form a cultivation mode of arts and science penetration, professional complementation and personality expansion, encourage extensive interaction among students with different cultural backgrounds, promote the social development of college students, and cultivate students' civic awareness and Public spirit, which is essentially a cultural organization to cultivate human beings.<sup>[2]</sup>Zhu Hanmin (2013) proposes that China's modern university academy system is a new type of student education and training organization that is integrated and constructed on the basis of emulating the British and American residential academy system and drawing on the essence of the traditional Chinese academy.<sup>[3]</sup> On the basis of analyzing the nature and function of academy, Professor Bie Dunrong (2015) defines academy system as an innovative student life and cultural education service organization with the functions of life support, teaching assistance, cultural education, administrative assistance and community self-governance.<sup>[4]</sup>

Although the definition of the university academy system has not yet been standardized, there is a preliminary consensus that the modern university academy system, on the basis of inheriting the spirit of the ancient Chinese academies and absorbing the experience of western residential colleges, uses the student dormitory as a platform, equips students with multiple tutors, and provides students with general education, ideological, moral and nurturing education, etc., and serves multiple functions, such as life, education, management and culture.

## ***2.2. Connotation of innovation ability of college students***

Clarifying the connotation of innovation ability is a prerequisite for promoting the cultivation of college students' innovation ability. The connotation of innovation ability is relatively rich, and scholars have not formed a unified view at present. Duan Chengfang (2005) believes that innovation ability is the ability to acquire knowledge and make new breakthroughs and achievements through independent learning, thinking and research on the basis of consolidating the existing knowledge, which consists of four interrelated elements, namely, knowledge experience, innovative thinking, innovative personality and innovative practice.<sup>[5]</sup>Li Runqi (2018) proposed that innovation ability is a special comprehensive psychological quality formed by college students in the process of renewing, creating and changing the original human society, which mainly includes three parts: the accumulation of previous knowledge, the enhancement of the way of thinking, and the strengthening of practical ability.<sup>[6]</sup>Jiang Lihua(2021) believe that innovation ability is a kind of comprehensive ability that contains many elements, including both the knowledge base of innovation, logical and non-logical thinking ability, innovation practice ability and so on, and also includes personal motivation, beliefs and other non-intellectual factors.<sup>[7]</sup>Jia Hanjie (2023) proposed that innovation ability is the ability of students to take innovation knowledge and skills as the basis, led by innovation consciousness, through the joint role of innovation thinking and innovation personality, to carry out the innovation of cognition and action in theoretical learning and scientific research practice, and ultimately to produce novelty and applicability of innovation results.<sup>[8]</sup>Innovative ability in this paper refers to the ability of students to use innovative thinking to solve existing problems or create new results with multiple values based on scientific knowledge structure and solid practical skills, driven by the sense of independent innovation.

### **3. Problems in the cultivation of college students' innovative ability under the traditional mode of educating people**

#### ***3.1. College students' innovative consciousness is not strong***

Innovation consciousness is the subjective desire to change old things and create new things under the premise of following the objective development law of things, consisting of innovation motivation, innovation interest, innovation emotion and innovation will,<sup>[9]</sup>emphasizing the subjective initiative and subjectivity of human beings. Under the traditional nurturing model, teachers dominate the teaching activities and have absolute authority, focusing on instilling systematic knowledge to students, coupled with the relatively single mode of teaching, resulting in a lack of opportunities for independent thinking and divergent thinking, as well as the spirit of critical questioning, which makes it difficult for students to develop a sense of innovation. In addition, most students have a biased understanding of innovation activities, thinking that it is the work of graduate students or researchers, and they are not willing to get out of the "comfort zone" of what teachers teach and what students learn in the traditional teaching mode, and spontaneously carry out innovation activities for exploration, and their enthusiasm for innovation is not high. Some students, due to the lack of precise guidance from professional teachers or their own lack of patience and perseverance, often stop at nothing when carrying out innovative activities, making it difficult to output valuable results, which in turn frustrates the enthusiasm of participating in innovative activities and is not conducive to further stimulating the sense of innovation.

#### ***3.2. Weak innovation knowledge of college students***

Innovative knowledge is the solid foundation and basic guarantee for college students to carry out innovation, which includes both in-depth professional knowledge and broad cultural knowledge and humanistic literacy. The practice of human innovation shows that major scientific and technological breakthroughs are generally based on the intersection, penetration and integration of different disciplines. Generally speaking, people with different disciplinary backgrounds and ways of thinking, and mastering a variety of research methods, are more likely to produce valuable and innovative results in innovation activities. The talent cultivation model of Chinese universities is generally based on professional education, dividing and managing students by faculty, department and class, and allocating learning and teaching resources related to their majors, which is conducive to improving the quality of cultivation of professional talents. However, under this education model, students only have professional skills but lack of general knowledge, their knowledge structure cannot be optimized and perfected, their academic vision is limited to a certain discipline, their multidimensional growth and comprehensive development are hindered, and their initiative and creativity are suppressed, which is not conducive to the development of innovative activities.

#### ***3.3. Rigid innovative thinking of college students***

Innovative thinking is an original form of thinking, which is the core and key to the formation of innovative ability, and its essence is new, transcendence and breakthrough.<sup>[10]</sup>The cultivation of innovative thinking is long-term and complex. Long-term refers to the fact that all stages of the growth and development of innovative subjects will continue to affect innovative thinking. Complexity means that the factors influencing the formation of innovative thinking of innovative subjects include genetics, acquired and living environment.<sup>[11]</sup>Under the background of our country's exam-oriented education, students are used to passively accepting the content taught by teachers in the classroom, lack of awareness of the discovery of problems and the spirit of active exploration, and are used to pursuing the "standard answer", and do not dare to question and criticize. In the long run, students have developed the habit of following the rules and regulations, sticking to the rules, superstitious authority, stereotyped thinking, flexibility, expandability, creativity is not enough, it is difficult to form a sense of innovation and innovative thinking. In the traditional teaching mode, teachers mostly use the lecture method in class, ignoring the interaction between teachers and students, students and students, and failing to create a relaxed and pleasant classroom atmosphere, which is not conducive to stimulating students' innovative thinking. In addition, most teachers lack the awareness and ability to carry out innovative education, which makes it difficult for them to effectively guide and accurately instruct students during the teaching process, and also hinders the formation of students' innovative thinking to a certain extent.

### ***3.4. Lack of innovation skills of college students***

Innovation skills refer to the information processing ability, hands-on ability, ability to use innovation techniques, ability to express innovation results and materialization ability of the innovation subject, which can be exercised and developed mainly through innovation practice. Common innovation practices in universities include both in-class and extra-curricular activities, which are mainly centralized practical teaching sessions, such as experimental and practical training courses, graduation design, etc., and extra-curricular activities, such as various kinds of competitions and social practice activities. First of all, due to the limited resources of some colleges and universities, backward teaching and research equipments, teachers' lack of practical teaching experience or lack of guidance in the teaching process, etc., it is often difficult to put the practical teaching links in the classroom into practice, which results in the failure of college students to get a good exercise and improvement of their innovative skills. Secondly, although China's colleges and universities actively carry out a variety of competitions to improve the innovation ability of college students, most of the competitions are oriented to students of science and engineering, and have not yet covered all the majors, which makes more students of liberal arts discouraged from improving their innovation and practice skills in this way. In addition, the innovation and practice activities carried out by universities are not attractive enough to students, and they are not designed and organized in accordance with the characteristics of the disciplines and the actual needs of students, so that more students cannot benefit from them.

## **4. Paths in the promotion of college students' innovative ability cultivation under the academy system model**

### ***4.1. Student-oriented, stimulate the innovative consciousness of college students***

Consciousness is the precursor of action, and innovative consciousness is the prerequisite and the first task for the cultivation of college students' innovative ability. The academy system adheres to the concept of "student-oriented", respects the main position of students, and attaches importance to the personalized development of students, which is conducive to the cultivation of students' innovative consciousness and is mainly reflected in the following aspects: Firstly, personalized cultivation program. The academy system gives full play to the autonomy and initiative of students, who can independently choose different courses and practice links, make study plans and arrange study progress, form personalized cultivation programs, and build personalized knowledge structures in accordance with their personal interests and development plans. Some academy systems also implement flexible study periods to meet students' individual development needs, such as Yuanpei College of Peking University, where students can apply for early or delayed graduation according to their own interdisciplinary and individualized study arrangements. Personalized training eliminates the drawbacks of scale and standardization in traditional talent cultivation, and is conducive to stimulating students' enthusiasm for learning and the spirit of independent exploration, thus promoting the formation of students' innovative consciousness and innovative thinking. Secondly, diversified teaching methods. The academy system generally implements "small class" teaching, and focuses on research-based teaching methods such as heuristic, discussion, and inquiry through teacher-student interactions, and guides students to carry out inquiry-based learning centered on problem solving. This teaching method changes students' passive acceptance into active exploration, which is conducive to the development of students' habits of independent learning and independent thinking, and has a positive effect on the cultivation of students' sense of problem and innovation. Thirdly, professionalized teacher guidance. The academy system implements the undergraduate tutorial system, and builds a "guided ecosystem" of academic tutors, peer tutors, social tutors, industrial tutors and other collaborative education. Academy system tutors generally have higher comprehensive quality and more active thinking, and they can play the role of academic guidance and spiritual leadership for students through teaching by example, and transfer the spirit of exploration, research and innovation of knowledge and perseverance to the students implicitly. On the other hand, tutors encourage students to actively participate in innovative activities and provide all-round and precise guidance to students, which can enhance their self-confidence and have a positive impact on further stimulating students' innovative consciousness.

#### ***4.2. Integration of generalists and specialists to enrich the innovative knowledge of university students***

The inspiration of innovation comes from the horizontal connection between knowledge, and the level of innovation ability depends on the width of students' knowledge and the flexibility of knowledge utilization,<sup>[12]</sup>so it can be seen that scientific and reasonable knowledge structure is the foundation of innovation for college students. The academy system emphasizes the integration of general education and specialization, comprehensive education, and creates an innovative atmosphere with fewer boundaries of knowledge, more intermingling of disciplines, and amorphous thinking through multiple initiatives, and is committed to optimizing and perfecting the knowledge structure of the students, and then enhancing their innovative ability. Firstly, it offers general education courses. The academy system attaches importance to general education, integrates the quality teachers and curriculum resources of the whole university, creates unique high-level general education core courses, and on this basis forms a multidisciplinary cross-penetration and effective fusion of general education and specialization of "general education courses + inter-professional electives + professional core courses (professional courses) + professional elective courses" curriculum system. Through course learning and reflection and discussion, students of the academy system can mobilize their desire for knowledge, broaden their cognitive horizons, analyze and solve problems in a multifaceted and interdisciplinary way with a connected and developmental perspective, and enhance their ability of value judgement and critical thinking as well as their ability of cross-study and active innovation. Secondly, it carries out multi-cultural activities. The academy system invites famous experts and scholars on campus and successful people from all walks of life outside the university to carry out lectures on general education themes, and carries out activities relying on reading classes, interest groups, and cultural salons, etc., so as to broaden the breadth and width of students' knowledge, enhance their humanistic literacy, and cultivate students with a global vision, an open mindset, a modern mindset, a sense of innovation and creativity, and an adventurous spirit of daring.

#### ***4.3. Immersion and cultivation to inspire creative thinking in university students***

Innovative thinking can guide human beings to make observations, associations and imaginations, check the goals, motives and directions, which guides innovative activities to a large extent, and it can even be said that innovative thinking dominates the occurrence and development of innovations.<sup>[13]</sup>The academy system will turn the traditional residential area into a multi-functional learning and living community with accommodation, independent study, teacher-student seminars, peer exchanges, extracurricular practice, etc., and build an elegant, comfortable, warm, harmonious and humanistic spiritual home for students, which is conducive to enlightening students' innovative thinking. Firstly, mixed accommodation is practiced. The academy system breaks the traditional nurturing model of centralizing students' accommodation according to their majors, and assigns students' accommodation according to the principle of cross-disciplinary and major-category integration. This mixed accommodation mode, regardless of faculties and majors, provides a new platform for students with different professional backgrounds and different thinking modes to exchange and communicate and learn and grow, which enables students to collide with each other, enlighten their wisdom, broaden their horizons, and enhance their innovative thinking ability. Secondly, it has perfected the hardware facilities. The academy system has public facilities such as lecture halls, reading rooms, academic counseling rooms, conversation rooms, study rooms, seminar rooms, etc., providing students with independent study, seminars and exchanges, library reading and other services, constructing a kind of teacher-student and peer interaction learning community, realizing the "horizontal mingling and vertical integration" of knowledge and professionalism. "Horizontal integration" refers to the mixing of students with diversified professional backgrounds and mindsets, and the exchange of knowledge and collision of ideas within the academy system. "Vertical integration" means that students of different grades of the same specialty and their tutors discuss and study in the same academy system, so that teaching and learning can be mutually reinforcing and innovative thinking can be stimulated. Thirdly, it emphasizes student self-government. The academy system promotes students' self-education, self-management and self-service, and has student organizations such as student union, self-management committee, building committee and self-management center, which guide students to actively participate in the construction of the academy and the management of daily affairs, and enhance students' sense of self-efficacy and management awareness. It also creates a relaxed, tolerant, harmonious and upward creative atmosphere for students, which is conducive to cultivating students' innovative spirit of daring to think and do, as well as their creative thinking of independence and heterogeneity.

#### 4.4. Multi-party synergy to improve innovation skills of university students

"All people's innovative ability is born in innovative activities"<sup>[14]</sup> innovative practical activities for college students to practice innovative skills is extremely important to promote the significance. The academy system has advantages in curriculum, practical teaching platform, faculty construction, and off-campus practice base expansion, which can promote the improvement of students' practical skills in a multi-dimensional way. Firstly, the advantages of curriculum and practical teaching platform. The academy system increases the proportion of credits for innovative practice by setting up "creative practice" courses and extracurricular practice training, guides students to closely integrate innovative theory and practice, and cultivates students' ability to apply what they have learned and grow in solving practical problems. The academy system fully relies on the university's national (provincial) key laboratories, national experimental teaching demonstration centers and other platforms, and shares with several colleges a platform for students' scientific research practice and open innovation empowerment, which provides students with enough opportunities for innovation practice and promotes the cultivation of students' innovation skills. Secondly, the advantages of the faculty. Tutors of the academy system and teachers of the academy collaborate to cultivate students' innovation ability. Tutors actively guide students to participate in teachers' scientific research projects, provide all-round and precise guidance when students participate in various disciplinary competitions, and stimulate students' interest in innovation and exercise their innovative skills in practice. Thirdly, expanding off-campus practice bases. The academy system fully utilizes its own policy resources and alumni resources to build more off-campus innovation practice platforms for students through corporate training or cooperation with off-campus organizations, guiding students to broaden their horizons and enhance their innovation skills. Some academies also provide students with opportunities for overseas exchanges, study tours and visits to broaden channels and build platforms for innovative practice, such as the Lu Ming Academy of Peking University, which subsidizes students' international summer research practice, encourages students to participate in international professional competitions and other ways to cultivate students' international vision and competitiveness, and effectively enhance students' innovative ability.

#### 5. Conclusion

There are the disadvantages of excessive utilitarianism and specialization in the traditional model of human education, managing students according to faculties and specialties, taking teachers as the leading role in classroom teaching, implementing "full irrigation" and "duck" teaching, and neglecting the subjectivity, initiative and creativity of students, which leads to a weak sense of innovation, weak innovative knowledge, rigid innovative thinking and lack of innovative skills. The modern university academy system is an important initiative for universities to innovate the talent cultivation mode, emphasizing student-oriented, attaching importance to students' personalized development, which is conducive to cultivating students' innovative consciousness; emphasizing comprehensive education, attaching importance to the integration of liberal and professional education, which is conducive to enriching students' innovative knowledge; it emphasizes teacher-student and peer interaction, and builds an elegant and comfortable spiritual home with humanistic atmosphere, which is conducive to enlightening students' innovative thinking; it emphasizes multi-party synergy, and expands students' practice platform with multiple initiatives, which is conducive to enhancing students' practical skills.

#### References

- [1] Li Cui Fang, Zhu Yingling. *The construction of modern college academy system and the reason tracing* [J]. *Coal Higher Education*, 2009, 27(03):49-51.
- [2] Ye Zhengrong. *Talent cultivation reform and college students' development based on academy system* [J]. *Journal of Zhaoqing College*, 2013(01):5-7.
- [3] Zhu Hanmin. *Chinese academy systems (eighth series)* [M]. Changsha: Hunan University Press, 2013: 676.
- [4] Bie Dunrong. *The nature and function of university academy system* [J]. *Higher education management*, 2015, 9(04):44-49.
- [5] Duan Chengfang. *Teaching Management Reform for Cultivating Innovative Ability of College Students* [D]. Hunan Agricultural University, 2005.
- [6] Li Runqi. *Research on the Cultivation of Innovative Ability of Contemporary College Students* [D]. Mudanjiang Normal College, 2018.

- [7] Jiang Lihua, Ji Linlin. *Educational dilemmas and strategies for solving dilemmas in the cultivation of innovation ability of college students* [J]. *Inner Mongolia Education*, 2021(33):66-72.
- [8] Jia Hanjie, Wang Zhenglun, Zhan Sen et al. *Reform of Mechanical Drawing Teaching for Cultivating Innovative Ability* [J]. *China Metallurgical Education*, 2023(04):39-41+45.
- [9] Kang Yutian. *Research on the cultivation of innovation consciousness of college students in the new era* [D]. *Northeast University of Petroleum*, 2022.
- [10] Yuan Jiayi. *Exploring the core factors of innovative thinking* [D]. *Jilin University*, 2019.
- [11] Liu Xiaohong. *Analysis of the value chain of innovation ability cultivation of college students* [J]. *China Metallurgical Education*, 2022(05):93-96+101.
- [12] Tan Chang, Ma Shufang. *Cultivation of college students' innovation ability under the perspective of big data* [J]. *Forest Teaching*, 2020(01):87-90.
- [13] Zhu Qiang. *Research on the Cultivation of College Students' Innovative Ability under the Perspective of Interdisciplinary Disciplines* [D]. *Shandong University*, 2018.
- [14] Yanan Z, Jihua W. *Research and Practice of Innovative Thinking and Practice Ability of University Students* [J]. *Teaching of Forestry Region*, 2017.